

CLAIMS

1. A rotary bit with a shank adapted to locate in a chuck, the shank having an insert end and an end section extending from the insert end, the end section having at least one elongate flat which locates inside the chuck when the shank is
5 operatively engaged in the chuck, and a wasted safety section spaced from the insert end by a spacing, the spacing of the wasted safety section from the insert end being sufficient so that when the shank is operatively engaged in the chuck, the wasted safety section is outside the chuck, the wasted safety section having a predetermined shear torque rating so that the shank shears at the wasted safety
10 section if the predetermined shear torque rating is exceeded.
2. A rotary bit according to Claim 1 wherein the shear torque rating at which the wasted safety section shears is in the range 15-30 ft lbs.
3. A rotary bit according to Claim 1 wherein the shear torque rating at which the wasted safety section shears is in the range 15-20 ft lbs.
- 15 4. A rotary bit according to Claim 1 wherein the shear torque rating at which the wasted safety section shears is in the range 25-30 ft lbs.
5. A rotary bit according to Claim 1 wherein the shank includes a further flat outboard of the wasted safety section so that after the wasted safety section has been sheared, if necessary, a user may still use the bit on a temporary basis to
20 complete a drilling task.
6. A rotary bit according to Claim 1 wherein the shank includes circumferentially spaced longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck.

7. A rotary bit according to Claim 1 wherein the shank includes multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck.
8. A rotary bit according to Claim 1 wherein the shank has a regular polygonal section including multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck.
9. A rotary bit according to Claim 1 wherein the shank includes circumferentially spaced longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and there being matching flats outboard of the wasted safety section so that after the wasted safety section has been sheared, if necessary, a user may still use the bit on a temporary basis to complete a drilling task.
10. A rotary bit according to Claim 1 wherein the shank includes multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and there being matching flats outboard of the wasted safety section so that after the wasted safety section has been sheared, if necessary, a user may still use the bit on a temporary basis to complete a drilling task.
11. A rotary bit according to Claim 1 wherein the shank has a regular polygonal section including multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and there being matching flats outboard of the wasted safety section so that after the wasted safety

section has been sheared, if necessary, a user may still use the bit on a temporary basis to complete a drilling task.

12. A rotary bit according to Claim 1 wherein the rotary bit is a coded one of a coded set of safety bits, the code being according to the shear torque rating and risk
5 factor associated with the type of drill being used.

13. A rotary bit according to Claim 1 wherein the rotary bit is a coded one of a coded set of safety bits, the code of each bit in the set being according to the shear torque rating and risk factor associated with the type of drilling activity being undertaken.

14. A rotary bit according to Claim 1 wherein the shank includes circumferentially spaced longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and the shear torque rating at which the wasted safety section shears is in the range 15-30 ft lbs.

15. A rotary bit according to Claim 1 wherein the shank includes multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and the shear torque rating at which the wasted safety section shears is in the range 15-30 ft lbs.

16. A rotary bit according to Claim 1 wherein the shank has a regular polygonal section including multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and the shear torque rating at which the wasted safety section shears is in the range 15-30 ft lbs.

17. A rotary bit according to Claim 1 wherein the rotary bit is a coded one of a coded set of safety bits, the code being according to the shear torque rating and risk

factor associated with the type of drill being used and the shear torque rating at which the wasted safety section shears is in the range 15-30 ft lbs.

18. A rotary bit according to Claim 1 wherein the rotary bit is a coded one of a coded set of safety bits, the code of each bit in the set being according to the shear torque rating and risk factor associated with the type of drilling activity being undertaken and the shear torque rating at which the wasted safety section shears is in the range 15-30 ft lbs.

19. A rotary bit according to Claim 1 wherein the shank includes circumferentially spaced longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and the shear torque rating at which the wasted safety section shears is in the range 25-30 ft lbs.

20. A rotary bit according to Claim 1 wherein the shank includes multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and the shear torque rating at which the wasted safety section shears is in the range 25-30 ft lbs.

21. A rotary bit according to Claim 1 wherein the shank has a regular polygonal section including multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and the shear torque rating at which the wasted safety section shears is in the range 15-30 ft lbs.

22. A rotary bit according to Claim 1 wherein the rotary bit is a coded one of a coded set of safety bits, the code being according to the shear torque rating and risk factor associated with the type of drill being used and the shear torque rating at which the wasted safety section shears is in the range 25-30 ft lbs.

23. A rotary bit according to Claim 1 wherein the rotary bit is a coded one of a coded set of safety bits, the code of each bit in the set being according to the shear torque rating and risk factor associated with the type of drilling activity being undertaken and the shear torque rating at which the wasted safety section shears is in the range 25-30 ft lbs.

24. A rotary bit according to Claim 1 wherein the shank includes circumferentially spaced longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and the shear torque rating at which the wasted safety section shears is in the range 15-20 ft lbs.

25. A rotary bit according to Claim 1 wherein the shank includes multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and the shear torque rating at which the wasted safety section shears is in the range 15-20 ft lbs.

26. A rotary bit according to Claim 1 wherein the shank has a regular polygonal section including multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and the shear torque rating at which the wasted safety section shears is in the range 15-20 ft lbs.

27. A rotary bit according to Claim 1 wherein the rotary bit is a coded one of a coded set of safety bits, the code being according to the shear torque rating and risk factor associated with the type of drill being used and the shear torque rating at which the wasted safety section shears is in the range 15-20 ft lbs.

28. A rotary bit according to Claim 1 wherein the rotary bit is a coded one of a coded set of safety bits, the code of each bit in the set being according to the shear

torque rating and risk factor associated with the type of drilling activity being undertaken and the shear torque rating at which the wasted safety section shears is in the range 15-20 ft lbs.

29. A rotary bit according to Claim 1 wherein the shear torque rating at which the wasted safety section shears is in the range 5-40 ft lbs.

30. A rotary bit according to Claim 1 wherein the shank includes multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and the shear torque rating at which the wasted safety section shears is in the range 5-40 ft lbs.

31. A rotary bit according to Claim 1 wherein the shank has a regular polygonal section including multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and the shear torque rating at which the wasted safety section shears is in the range 5-40 ft lbs.

32. A rotary bit according to Claim 1 wherein the rotary bit is a coded one of a coded set of safety bits, the code being according to the shear torque rating and risk factor associated with the type of drill being used and the shear torque rating at which the wasted safety section shears is in the range 5-40 ft lbs.

33. A rotary bit according to Claim 1 wherein the shank has a regular polygonal section including multiple longitudinally extending flats which locate inside the chuck when the shank is operatively engaged in the chuck and the shear torque rating at which the wasted safety section shears is in the range 5-40 ft lbs.